

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Christopher A. Poirier et al.

Application No.: 10/644,625

Confirmation No.: 7519

Filed: August 20, 2003

Art Unit: 2825

For: A SYSTEM FOR AND METHOD OF
CONTROLLING A VLSI ENVIRONMENT

Examiner: S. Whitmore

REPLY BRIEF

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

As required under 37 C.F.R. § 41.41(a)(1), this Reply Brief is filed within two months of the Examiner's Answer dated May 18, 2007 ("Examiner's Answer"), and is in furtherance of the Appeal Brief filed on February 14, 2007.

No fee is required for this Reply Brief.

This Brief contains items under the following headings pursuant to M.P.E.P. § 1208:

- I. Status of Claims
- II. Grounds of Rejection to be Reviewed on Appeal
- III. Arguments
- IV. Conclusion

I. STATUS OF CLAIMS

A. Total Number of Claims in Application

There are 32 claims pending in application.

B. Current Status of Claims

1. Claims canceled: None
2. Claims withdrawn from consideration but not canceled: None
3. Claims pending: 1-32
4. Claims allowed: 4, 5, 14, 15, 22, 23, and 28-32
5. Claims rejected: 1-3, 6-13, 16-21, 24-27.

C. Claims On Appeal

The claims on appeal are claims 1-3, 6-13, 16-21, 24-27.

II. GROUND S OF REJECTION TO BE REVIEWED ON APPEAL

A. Claims 1-3, 6-13, 16-21, 24-27 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,694,492 to Shakkarwar (hereinafter “Shakkarwar”).

III. ARGUMENTS

As an initial matter, Appellant notes that the Examiner has withdrawn the rejections of claims 4, 5, 14, 15, 22, 23, and 28-32. *See Examiner’s Answer*, pgs. 10-12. Accordingly, only claims 1-3, 6-13, 16-21, 24-27 are now before the Board on Appeal. Appellant respectfully traverses the remaining rejections, and requests that the Board overturn these rejections in light of the remarks contained herein. As in the Appeal Brief of February 14, 2007, Appellant argues many of the rejected claims separately. Thus, Appellant respectfully asserts that separately argued claims do not stand or fall together. *See* 37 C.F.R. § 41.37(c)(1)(vii). Appellant hereby reasserts its arguments made for the separately argued claims in Appellant’s Appeal Brief. For the sake of

brevity, Appellant does not include those arguments herein, but instead submits the following supplemental remarks in reply to the Examiner's Answer.

- A. Claims 1-3, 6-13, 16-21, and 24-27 are rejected under 35 U.S.C. § 102(e) as being anticipated by Shakkarwar.

To anticipate a claim under 35 U.S.C. § 102, a single reference must teach each and every element of the claim. *See Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). As discussed below, Shakkarwar fails to teach each and every claim limitation. Therefore Appellant respectfully requests that the Board overturn these rejections.

1. Independent claims 1, 8, 16, and 24

Claims 1, 8, 16, and 24 recite “said embedded micro-controller monitors temperatures at a plurality of locations on the integrated circuit.” In the Examiner’s Answer, the Examiner points to Shakkarwar, particularly at col. 4 lines 16-54 and col. 6 lines 39-62, as satisfying this limitation. *See Examiner’s Answer*, pg. 5. In doing so, the Examiner notes that Shakkarwar’s internal controller “can use various inputs, such as multiple test vectors to stimulate the CPU’s functions or sub-components operation under various conditions....” *Id.* Appellant again points out that Shakkarwar merely discloses an internal controller applying test vectors to monitor the function of sub-components and applying multiple tests to determine IC characteristics under different conditions. *See Shakkarwar* col. 4, lines 16-19. Again, however, Appellant acknowledges that Shakkarwar discloses a single thermal sensor 107, where a signal 124 is received at test controller 110 from sensor 107 and may be used to “assess thermal characteristics of central processing unit 102.” *See Shakkarwar*, col. 6 lines 21-24. Also, as seen in Figure 1, thermal sensor 107 provides a single output to each of the power controller 108, internal controller 130, and test controller 110. Appellant points out that Shakkarwar’s disclosure of a *single* sensor (thermal sensor 107) having a *single* output signal sent to a number of controllers (signal 117, 124, 138) suggests that Shakkarwar does not teach monitoring temperatures at a plurality of locations. Moreover, Shakkarwar simply states “[a] thermal sensor may be used to monitor thermal parameters of the integrated circuit. *Id.*

col. 4 lines 20-29. As such, Shakkarwar merely discloses that its thermal sensor can monitor thermal parameters of the IC. However, there is no indication that Shakkarwar's thermal parameters are measured at a plurality of locations on the integrated circuit, as set forth in the claims. As such, Shakkarwar fails to teach monitoring temperatures at a plurality of locations on the integrated circuit as set forth in the claims. Therefore, Appellant respectfully requests that the Board overturn the rejection of record.

2. Dependent Claims 2, 3, 6, 7, 9-13, 17-21, and 25-27

Claims 2, 3, 6, and 7 depend from claim 1, claims 9-13 depend from claim 8, claims 17-21 depend from claim 16, and claims 25-27 depend from claim 24. Each of the dependent claims inherit every limitation of the claims from which they depend. As such, claims 2-3, 6, 7, 9-13, 17-21, and 25-27 set forth limitations not taught by Shakkarwar, and are allowable at least for the reasons set forth above with respect to claims 1, 8, 16, and 24. Further, these claims set forth limitations making them patentable in their own right. Therefore Appellant respectfully requests that the Board overturn these rejections.

a. *Dependent claim 6*

For example, claim 6 recites "fuses that provide hardware selection of VLSI integrated circuit environment parameters that are monitored by the embedded micro-controller." The Examiner points to Shakkarwar, at col. 3 lines 34-50, as satisfying this limitation. See Examiner's Answer, pg. 8. However, Shakkarwar merely discloses that its fuses may be used to implement a clock register or voltage register, which are programmed at the time the CPU die is tested. As such, Shakkarwar's fuses do not provide hardware selection of VLSI integrated circuit environment parameters that are monitored by the embedded micro-controller, as set forth in claim 6. Moreover, Rogenmoser and Kim do not appear to teach or suggest this limitation. Therefore, Appellant respectfully requests that the Board indicate the allowability of this claim.

b. *Dependent claim 7*

Claim 7 recites updateable or replaceable firmware, said firmware comprising algorithms for determining how to respond to temperature, power, voltage, or clock parameters. The Examiner points to Shakkarwar, at col. 3 lines 34-50, as satisfying this limitation. *See* Examiner's Answer, pg. 8. However, Shakkarwar merely discloses "a diagnostics program to verify responses from a CPU." *See* Shakkarwar at col. 6, lines 48-49. However, Shakkarwar does not teach that its diagnostics program is a firmware, and even if it could be construed as such, the program is neither updateable nor replaceable. Appellant notes that the Examiner opines "it is viewed to be firmware because it is hardware that includes software that is updateable or replaceable by programming." *See* Examiner's Answer, pg. 9. Contrary to the Examiner's opinion, hardware that includes software is not necessarily firmware. Also, the Examiner has failed to show support for his assertion that Shakkarwar's diagnostics program is updateable or replaceable. Moreover, Appellant points out that Shakkarwar is wholly silent as to firmware comprising algorithms for determining how to respond to temperature, power, voltage, or clock parameters. Finally, neither of Rogenmoser or Kim appear to teach or suggest this limitation. As such, Shakkarwar does not teach every limitation of Appellant's claimed invention. Therefore, Appellant respectfully requests that the Board indicate the allowability of this claim.

c. *Dependent claims 20 & 21*

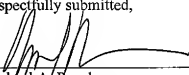
Claims 20 and 21 recite "code for monitoring a temperature in a core of the processor." The Examiner points to Shakkarwar, at col. 4 lines 4-51 and col. 6 lines 40-62, as satisfying this limitation. *See* Examiner's Answer, pg. 10. However, Appellant notes that Shakkarwar merely discloses that "a core of the processor" is CPU core 106. However, Shakkarwar shows thermal sensor 107 located outside of CPU core 106, such that the temperature monitored is outside of CPU core 106. *See* Shakkarwar at Fig. 1. As such, Shakkarwar, at best, teaches monitoring a temperature outside a core of the processor, yet does not teach monitoring a temperature in a core of the processor. Therefore, Appellant respectfully requests the Board overturn the 35 U.S.C. § 102(e) rejection of record.

IV. CONCLUSION

In view of the arguments provided above, in conjunction with the arguments provided in the Appeal brief, Appellant requests that the Board overturn the outstanding rejections of claims 1-32.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 08-2025, under Order No. 200208727-1 from which the undersigned is authorized to draw.

Respectfully submitted,

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I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with § 1.6(a)(4).

Date of Transmission: July 17, 2007

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Date: July 17, 2007